

## Causes and Effects of Backflow

Backflow can threaten both public and private water supplies. Backflow is caused by "cross-connections," connections between a safe drinking water supply and possible sources of contamination. All homes have potential cross-connections – water pipes and plumbing fixtures that may allow contamination to enter drinking water. They can be serious health hazards.

#### What is Backflow?

Backflow results primarily from a pressure differential. This pressure differential will either cause back pressure or back siphonage. An example of back siphonage is when the water pressure coming into your home suddenly drops, a siphon is created and contaminated water can be drawn back into previously clean water supplies (for example, an underground water main or a private well).

## **Consequences of Backflow Through Back Siphonage**

Backflow can have many undesirable effects. For example:

- A toilet flush valve without an anti-siphon device can permit toilet odors, vapors and worse to get into household plumbing and the water you drink.
- If a garden hose is used to clean out sewer lines or rain gutter downspouts, a drop in pressure can cause contamination from those sources to be drawn back into your water supply.
- Similarly, water being used to fill a swimming pool can be drawn back into the water supply during pressure drops, bringing contamination with it.
- If an insecticide attachment is used on a garden hose, backflow can cause potentially lethal contamination of water supplies.

### Sources of Backflow

Backflow can occur wherever there are potential cross-connections in a water system. Potential cross- connections include:

- Kitchen: dishwashers, garbage disposals
- Bathroom: toilets, hand-held shower heads, steam bath generators, bath whirlpool devices
- Faucets: hose bibbs, sill cocks, or any faucet where a hose can be attached
- Outdoors: swimming and wading pools, fish ponds, fountains, lawn irrigation systems

Hoses are a special problem and wherever they are attached to a threaded faucet a potential backflow hazard exists.

## **Preventing Backflow**

To protect your water supply, backflow preventers should be installed anywhere a potential cross- connection exists. The costs of backflow prevention may seem prohibitive, but they are outweighed by the benefits. Consider: small amounts of some carcinogenic lawn chemicals and other contaminants could occasionally backflow for years and go unnoticed until serious health effects appear for those drinking the water. Backflow preventers can help safeguard the health of you and your family.

# **Type of Backflow Preventers**

There are several different types of backflow preventers. Two of the most common types are hose bibb vacuum breakers and pressure type vacuum breakers.

#### Hose Bibb Vacuum Breakers

A hose bibb vacuum breaker is an inexpensive device installed on a faucet or sill cock to protect against backflow from a garden hose or other type of hose.

# Pressure Type Vacuum Breakers

Pressure vacuum breakers are used primarily on the pipes supplying water to underground lawn sprinkler systems. They prevent the backflowing of soil bacteria, animal wastes, fertilizers, and pesticides.